

REMARKS

The only issues outstanding in the Office Action of December 15, 2011, are the rejections under 235 USC §112 and §103. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

At the outset, the Examiner is thanked for indicating withdrawal of the prior rejections over art.

Rejection under 35 USC §112:

Claim 7 has been rejected under 35 USC §112, fourth paragraph. Cancellation of the claim renders this rejection moot.

Rejection under 35 USC §103:

Claims 1-3 and 6-17 have been rejected under 35 USC §103 over each of Goossens, *Adv. Mater.*, and *Eur. J. Inorg. Chem.* Reconsideration of this rejection is respectfully requested.

Both Goossens articles teach a catalyst composition comprising “epitaxial” FAU zeolite films, produced on micron sized EMT support crystals, using a two-step synthetic procedure in which the support crystals are added to a synthesis gel for crystallization of the FAU phase. See, for example, the abstract of the *Eur. J.* article and the paragraph bridging the columns at page 561 of the *Adv. Mater.* article. It is argued, for example at page 5 of the Office Action, that the “only substantive difference” between the material of Goossens and the composition claim is the failure of the references to recite a “uniformity criterion.” Indeed, this establishes a non-obvious difference over the disclosure of these references. Although it is argued, again at page 5, that the uniformity criterion is a “characteristic that naturally flows from the composition, (i.e., from a core having a uniform layer thereon)” this is submitted not to be accurate.

Both Goossens articles disclose that their epitaxial film overgrown on support crystals is prepared in a method such that the FAU nucleation is not homogenous, see page 1170, column 2, lines 4-7 (“homogenous nucleation and initial breeding. . . were suppressed”, see also page 562, column 1, lines 7-8 of *Adv. Mater.* In such epitaxial growth of the film, the FAU crystals are

oriented according to the EMT phase (see Eur. J. page 1170, column 1, lines 22-26 and page 1171, column 1, lines 54-55, see Adv. Mater page 552, column 2, lines 5-17). Epitaxial growth is observed when the zeolite topologies are structurally related, as with EMT and FAU (note Eur. J. page 1168, column 1 and Adv. Mater. page 561, column 2, lines 5-6 and page 563, column 1). Epitaxial growth thus results in preferential nucleation and growth of the FAU crystallites on the corner and edges of the EMT support crystals. (See Eur. J., page 1179, column 2, end of the first paragraph). This necessarily results in a non-uniform distribution of the FAU nuclei on the EMT crystals, and thus necessarily results in a FAU film with a non-uniform thickness. Thus, these disclosures fail to suggest, much less enable, production of a material with an essentially homogenous, external zeolite layer, conforming with the recitation in the claims of a uniformity criterion which is less than 0.30, representing the ratio of the difference between the maximum thickness of the external layer and the minimum thickness of that layer divided by the average of these two thicknesses. Such a homogenous layer, defined by the uniformity criterion, is not taught or suggested by the references, and accordingly they do not render the present claims obvious under 35 USC §103. Withdrawal of the rejection is accordingly respectfully requested.

In view of the above remarks, favorable reconsideration is courteously requested. If, however, there are any residual matters which can be expeditiously resolved by a telephone conference, the Examiner is courteously invited to telephone Counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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